



U.S. ENVIRONMENTAL PROTECTION AGENCY

PREMANUFACTURE
NOTICE

CES

AGENCY USE ONLY

Date of receipt

RECEIVED
OPPT CBIC

2008 OCT -9 PM 12:12

Company Sanitized

Enter the total number of pages
in the Premanufacture Notice

18

519000014

EPA case number
P-09-14

GENERAL INSTRUCTIONS

TS - T R W 1 0 4

- You must provide all information requested in this form to the extent that it is known to or reasonably ascertainable by you. Make reasonable estimates if you do not have actual data.
- Before you complete this form, you should read the "Instructions Manual for Premanufacture Notification" (the Instructions Manual is available from the Toxic Substances Control Act (TSCA) Information Service by calling 202-554-1404, or faxing 202-554-5603).
- If a user fee has been remitted for this notice (40 CFR 700.45), indicate in the boxes above the TS-user fee identification number you have generated. Remember, your user fee ID number must also appear on your corresponding fee remittance, which is sent to EPA, Washington Financial Management Center (3303), P.O. 360399M, Pittsburgh, PA 15251-6399, Attn. TSCA User fee.

Part I — GENERAL INFORMATION

You must provide the currently correct Chemical Abstracts (CA) Name of the new chemical substance, even if you claim the identity as confidential. You may authorize another person to submit chemical identity information for you, but your submission will not be complete and the review will not begin until EPA receives this information. A letter in support of your submission should reference your TS user fee identification number. You must submit an original and two copies of this notice including all test data. If you claimed any information as confidential, a single sanitized copy must also be submitted.

Part II — HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

If there are several manufacture, processing, or use operations to be described in Part II, sections A and B of this notice, reproduce the sections as needed.

Part III — LIST OF ATTACHMENTS

Attach additional sheets if there is not enough space to answer a question fully. Label each continuation sheet with the corresponding section heading. In Part III, list these attachments, any test data or other data and any optional information included in the notice.

OPTIONAL INFORMATION

You may include any information that you want EPA to consider in evaluating the new substance. On page 11 of this form, space has been provided for you to describe pollution prevention and recycling information you may have regarding the new substance.

So-called "binding" boxes are included throughout this form for you to indicate your willingness to be bound to certain statements you make in this section, such as use, production volume, protective equipment... This option is intended to reduce delays that routinely accompany the development of consent orders or Significant New Use Rules. Except in the case of exemption applications (such as TMEA, LVE, LOREX) where certain information provided in such notification is binding on the submitter when the Agency approves the exemption application, checking a binding box in this notice does not by itself prohibit the submitter from later deviating from the information (except chemical identity) reported in the form.

CONFIDENTIALITY CLAIMS

You may claim any information in this notice as confidential. To assert a claim on the form, mark (X) the confidential box next to the information that you claim as confidential. To assert a claim in an attachment, circle or bracket the information you claim as confidential. If you claim information in the notices as confidential, you must also provide a sanitized version of the notice, (including attachments). For additional instructions on claiming information as confidential, read the Instructions Manual.



Mark (X) if any information in this notice is claimed as confidential.

TEST DATA AND OTHER DATA

You are required to submit all test data in your possession or control and to provide a description of all other data known to or reasonably ascertainable by you, if these data are related to the health and environmental effects on the manufacture, processing, distribution in commerce, use, or disposal of the new chemical substance. Standard literature citations may be submitted for data in the open scientific literature. Complete test data (written in English), not summaries of data, must be submitted if they do not appear in the open literature. You should clearly identify whether test data is on the substance or on an analog. Also, the chemical composition of the tested material should be characterized. Following are examples of test data and other data. Data should be submitted according to the requirements of §720.50 of the Premanufacture Notification Rule (40 CFR Part 720).

Test Data (Check Below any included in this notice)

- | | | | |
|---------------------------------|---|---|------------------------------|
| • Environmental fate data | <input type="checkbox"/> Yes | • Other data | <input type="checkbox"/> Yes |
| • Health effects data | <input type="checkbox"/> Yes | Risk assessments | <input type="checkbox"/> |
| • Environmental effects data | <input type="checkbox"/> Yes | Structure/activity relationships | <input type="checkbox"/> |
| • Physical/Chemical Properties* | <input checked="" type="checkbox"/> Yes | Test data not in the possession or control of the submitter | <input type="checkbox"/> |

* A physical and chemical properties worksheet is located on the last page of this form.

TYPE OF NOTICE (Check Only One)

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | PMN (Premanufacture Notice) |
| <input type="checkbox"/> | INTERMEDIATE PMN (submitted in sequence with final product PMN) |
| <input type="checkbox"/> | SNUN (Significant New Use Notice) |
| <input type="checkbox"/> | TMEA (Test Marketing Exemption Application) |
| <input type="checkbox"/> | LVE (Low Volume Exemption) @ 40 CFR 723.50(c)(1) |
| <input type="checkbox"/> | LOREX (Low Release/Low Exposure Exemption) @ 40 CFR 723.50(c)(2) |
| <input type="checkbox"/> | LVE Modification <input type="checkbox"/> LOREX Modification <input type="checkbox"/> |

IS THIS A CONSOLIDATED PMN? ☐ Yes# of chemicals or polymers 1
(Prenotice Communication # required, enter # on page 3)

Public reporting burden for this collection of information is estimated to average 110 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Director, Collection Strategies Division (2822), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460; and to the Office of Management and Budget, Paperwork Reduction Act (2070-0012), Washington, D.C. 20503.

CERTIFICATION -- A Printed copy of this signature page, with original signature, must be submitted

I certify that to the best of my knowledge and belief:

1. The company named in Part I, section A, subsection 1a of this notice form intends to manufacture or import for a commercial purpose, other than in small quantities solely for research and development, the substance identified in Part I, Section B.
2. All information provided in this notice is complete and truthful as of the date of submission.
3. I am submitting with this notice all test data in my possession or control and a description of all other data known to or reasonably ascertainable by me as required by §720.50 of the Premanufacture Notification Rule.

Additional Certification Statements:

If you are submitting a PMN, Intermediate PMN, Consolidated PMN, or SNUN, check the following **user fee** certification statement that applies:

- ☒ The Company named in Part I, Section A has remitted the fee of \$2500 specified in 40 CFR 700.45(b), or
- ☐ The Company named in Part I, Section A has remitted the fee of \$1000 for an Intermediate PMN (defined @ 40 CFR 700.43) in accordance with 40 CFR 700.45(b), or
- ☐ The Company named in Part I Section A is a small business concern under 40 CFR 700.43 and has remitted a fee of \$100 in accordance with 40 CFR 700.45(b).

If you are submitting a **low volume exemption (LVE)** application in accordance with 40 CFR 723.50(c)(1) or a **Low release and low exposure exemption (LoRex)** application in accordance with 40 CFR 723.50(c)(2), check the following certification statements:

- ☐ The manufacturer submitting this notice intends to manufacture or import the new chemical substance for commercial purposes, other than in small quantities solely for research and development, under the terms of 40 CFR 723.50.
- ☐ The manufacturer is familiar with the terms of this section and will comply with those terms; and
- ☐ The new chemical substance for which the notice is submitted meets all applicable exemption conditions.
- ☐ If this application is for an LVE in accordance with 40 CFR 723.50(c)(1), the manufacturer intends to commence manufacture of the exempted substance for commercial purposes within 1 year of the date of the expiration of the 30 day review period.

The accuracy of the statements you make in this notice should reflect your best prediction of the anticipated facts regarding the chemical substance described herein. Any knowing and willful misinterpretation is subject to criminal penalty pursuant to 18 USC 1001.

Confidential

Signature and title of Authorized Official (Original Signature Required)

Date

Signature of agent - (if applicable)

Date

William R. Inge Vice President

Oct. 7, 2008

Part I -- GENERAL INFORMATION					
Section A -- SUBMITTER IDENTIFICATION					Confidential
Mark () the "Confidential" box next to any subsection you claim as confidential					
1a. Person Submitting Notice (in U.S.)	Name of authorized official		Position		<input type="checkbox"/> Confidential
	William R Troy, Ph. D.		Vice President and General Manager, Product Safety & Regulatory Affairs		
	Company				
	Firmenich Inc.				
	Mailing address (number and street)				
		P.O. Box 5880			
City, State		Postal Code			
Princeton, NJ		08543			
b. Agent (if applicable)	Name of authorized official		Position		<input type="checkbox"/> Confidential
	Company				
	Mailing address (number and street)				
	City, State		Postal Code		
c. If you are submitting this notice as part of a joint submission, mark (X) this box. <input type="checkbox"/>					
Joint Submitter (if applicable)	Name of authorized official		Position		<input type="checkbox"/> Confidential
	Company				
	Mailing address (number and street)		City, State		
Province, Country		Postal Code		Telephone (include country or area code)	
2. Technical Contact (in U.S.)	Name of authorized official		Position		<input type="checkbox"/> Confidential
	Colin L. McIntosh, Ph. D.		Director of Regulatory Affairs		
	Company				
	Firmenich Inc				
	Mailing address (number and street)				
		P.O. Box 5880			
City, State		Postal Code		Telephone (include area code)	
Princeton, NJ		08543		609 580-4990	
3. If you have had a prenotice communication (PC) concerning this notice and EPA assigned a PC Number to the notice, enter the number. →				Mark (X) if none → <input checked="" type="checkbox"/>	<input type="checkbox"/> Confidential
4. If you previously submitted an exemption application for the chemical substance covered by this notice, enter the exemption number assigned by EPA. If you previously submitted a PMN for this substance enter the PMN number assigned by EPA (i.e. withdrawn or incomplete). →				Mark (X) if none → <input checked="" type="checkbox"/>	<input type="checkbox"/> Confidential
5. If you have submitted a notice of Bona fide intent to manufacture or import for the chemical substance covered by this notice, enter the notice number assigned by EPA. →				Mark (X) if none → <input checked="" type="checkbox"/>	<input type="checkbox"/> Confidential
6. Type of Notice - Mark (X)					
1. <input type="checkbox"/> Manufacture Only		2. <input checked="" type="checkbox"/> Import Only		3. <input type="checkbox"/> Both	
<input type="checkbox"/> Binding Option		<input type="checkbox"/> Binding Option			
Mark (X)		Mark (X)			

Part I -- GENERAL INFORMATION -- Continued			
Section B -- CHEMICAL IDENTITY INFORMATION:		You must provide a currently correct Chemical Abstracts (CA) name of the substance based on the ninth Collective Index (9CI) of CA nomenclature rules and conventions.	
Mark (X) the "Confidential" box next to any item you claim as confidential			
Complete either item 1 (Class 1 or 2 substances) or 2 (Polymers) as appropriate. Complete all other items.			
If another person will submit chemical identity information for you (for either Item 1 or 2), mark (X) the box at the right. Identify the name, company, and address of that person in a continuation sheet.			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
1. Class 1 or 2 chemical substances (for definitions of class 1 and class 2 substances, see the Instructions Manual)			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
a. Class of substance - Mark (X) 1 <input type="checkbox"/> Class 1 or 2 <input checked="" type="checkbox"/> Class 2			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
b. Chemical name (Currently correct Chemical Abstracts (CA) Name that is consistent with TSCA Inventory listings for similar substances. For Class 1 substances a CA Index Name must be provided. For Class 2 substances either a CA Index Name or CA Preferred Name must be provided, which ever is appropriate based on CA 9CI nomenclature rules and conventions).			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
Oils, Iris germanica, resinoid			
Definition: Derivatives and their physically modified derivatives, Iris geranica			
c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice: (check one).			
<input checked="" type="checkbox"/> Method 1 (CAS Inventory Expert Service - a copy of the Identification report obtained from the CAS Inventory Expert Services must be submitted as an attachment to this notice) <input type="checkbox"/> Method 2 (Other Source)			
d. Molecular formula		CBI <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	CAS Registry Number (if a number already exists for the substance) 1048028-77-8 <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
N/A			
e. For a class 1 substance, provide a complete and correct chemical structure diagram. For a class 2 substance, provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained. Please see the E-PMN Instruction Manual for discussion of "native format" diagram software which can be helpful in reviewing your substance.			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<input type="checkbox"/> Mark (X) this box if you attach a continuation sheet.			

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For a class 2 substance - (1) List the immediate precursor substances with their respective CAS Registry Numbers. (2) Describe the nature of the reaction or process. (3) Indicate the range of composition and the typical composition (where appropriate).

e. (1) List the immediate precursor substances with their respective CAS Registry Numbers.
Name (CAS #)

N/A

Confidential

☐

e. (2) Describe the nature of the reaction or process.

This material is produced by ethyl alcohol purification to form the Resinoid Absolute of the extraction from the rhizome of *Iris germanica* using volatile solvents.

☐

e. (3) Indicate the range of composition and the typical composition (where appropriate).

See attachments

☐

☒ Mark (X) this box if you attach a continuation sheet.

Part I -- GENERAL INFORMATION -- Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

2. Polymers (For a definition of polymer, see the Instructions Manual.)

Confidential

- a. Indicate the number-average weight of the lowest molecular weight composition of the polymer you intend to manufacture. Indicate maximum weight percent of low molecular weight species (not including residual monomers, reactants, or solvents) below 500 and below 1,000 absolute molecular weight of that composition.

Describe the methods of measurement or the basis for your estimates: GPC ☐ Other ☐ : (Specify below)

(i) lowest number average molecular weight: _____

(ii) maximum weight % below 500 molecular weight: _____

(iii) maximum weight % below 1000 molecular weight: _____

☐ Mark (X) this box if you attach a continuation sheet.

- b. You must make separate confidentiality claims for monomer or other reactant identity, composition information, and residual information. Mark (X) the "Confidential" box next to any item you claim as confidential

- (1) - Provide the specific chemical name and CAS Registry Number (if a number exists) of each monomer or other reactant used in the manufacture of the polymer.
 (2) - Mark (X) this column if entry in column (1) is confidential.
 (3) - Indicate the typical weight percent of each monomer or other reactant in the polymer.
 (4) - Choose "yes" from drop down menu if you want a monomer or other reactant used at two weight percent or less to be listed as part of the polymer description on the TSCA Chemical Substance Inventory.
 (5) - Mark (X) this column if entries in columns (3) and (4) are confidential.
 (6) - Indicate the maximum weight percent of each monomer or other reactant that may be present as a residual in the polymer as manufactured for commercial purposes.
 (7) - Mark (X) this column if entry in column (6) is confidential.

Monomer or other reactant and CAS Registry Number (1)	Confidential (2)	Typical composition (3)	Include in identity (4)	Confidential (5)	Maximum residual (6)	Confidential (7)
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
	<input type="checkbox"/>	%	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>

☐ Mark (X) this box if you attach a continuation sheet.

<p>c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice (check one). <input type="checkbox"/> Method 1 (CAS Inventory Expert Service - a copy of the identification report obtained from CAS Inventory Expert Service must be submitted as an attachment to this notice) <input type="checkbox"/> Method 2 (other source)</p>	<p>CBI <input type="checkbox"/></p>
<p>d. The currently correct Chemical Abstracts (CA) name for the polymer that is consistent with TSCA Inventory listings for similar polymers.</p>	<input type="checkbox"/>
<p>CAS Registry Number (if a number already exists for the substance)</p>	<input type="checkbox"/>
<p>e. Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained. Please see the E-PMN Instruction Manual for discussion of "native format" diagram software which can be helpful in reviewing your substance.</p>	<input type="checkbox"/>
<div style="height: 500px;"></div>	
<p><input type="checkbox"/> Mark (X) this box if you attach a continuation sheet</p>	

Part I -- GENERAL INFORMATION -- Continued**Section B -- CHEMICAL IDENTITY INFORMATION -- Continued**

3. Impurities

- (a) - Identify each impurity that may be reasonably anticipated to be present in the chemical substance as manufactured for commercial purpose. Provide the CAS Registry Number if available. If there are unidentified impurities, enter "unidentified."
- (b) - Estimate the maximum weight % of each impurity. If there are unidentified impurities, estimate their total weight %.

Impurity and CAS Registry Number (a)	Maximum percent (b)	Confidential
N/A	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>
	%	<input type="checkbox"/>

☐ Mark (X) this box if you attach a continuation sheet.

4. Synonyms - Enter any chemical synonyms for the new chemical identified in subsection 1 or 2.

Orris Oil

Confidential

☐
☐ Mark (X) this box if you attach a continuation sheet.

5. Trade identification - List trade names for the new chemical substance identified in subsection 1 or 2.

N/A

☐
☐ Mark (X) this box if you attach a continuation sheet.

6. Generic chemical name - If you claim chemical identify as confidential, you must provide a generic name for your substance that reveals the specific chemical identity of the new chemical substance to the maximum extent possible. Refer to the TSCA Chemical Substance Inventory, 1985 Edition, Appendix B for guidance on developing generic names.

☐ Mark (X) this box if you attach a continuation sheet.

7. Byproducts - Describe any byproducts resulting from the manufacture, processing, use, or disposal of the new chemical substance. Provide the CAS Registry Number if available.

Byproduct (1)	CAS Registry Number (2)	Confidential
None		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

☐ Mark (X) this box if you attach a continuation sheet.

Part I -- GENERAL INFORMATION -- Continued**Section C -- PRODUCTION, IMPORT, AND USE INFORMATION:**

Mark (X) the "Confidential" box next to any item you claim as confidential.

1. Production volume -- Estimate the **maximum** production volume during the first 12 months of production. Also estimate the maximum production volume for any consecutive 12-month period during the first three years of production. Estimates should be on 100% new chemical substance basis. For a Low Volume Exemption application, if you choose to have your notice reviewed at a lower production volume than 10,000 kg/yr, specify the volume and mark (x) in the binding box. If granted, you are bound to this volume

Maximum first 12-month production (kg/yr) (100% new chemical substance basis)	Maximum 12-month production (kg/yr) (100% new chemical substance basis)	Confidential	Binding Option Mark (x)
		<input checked="" type="checkbox"/>	<input type="checkbox"/>

2. Use Information -- You must make separate confidentiality claims for the description of the category of use, the percent of production volume devoted to each category, the formulation of the new substance, and other use information. Mark (X) the "Confidential" Box next to any item you claim as confidential.

a. (1) --Describe each intended category of use of the new chemical substance by function and application. (2) --Mark (X) this column if entry column (1) is confidential business information (CBI). (3) --Indicate your willingness to have the information provided in column (1) binding. (4) --Estimate the percent of total production for the first three years devoted to each category of use. (5) --Mark (X) this column if entry in column (4) is confidential business information (CBI). (6) --Estimate the percent of the new substance as formulated in mixtures, suspensions, emulsions, solutions, or gels as manufactured for commercial purposes at sites under your control associated with each category of use. (7) --Mark (X) this column if entry in column (6) is confidential business information (CBI). (8) --Indicate % of product volume expected for the listed "use" sectors. Mark more than one box if appropriate. Mark (X) to indicate your willingness to have the use type provided in (8) binding. (9) --Mark (X) this column if entry(ies) in column (8) is (are) confidential business information (CBI).

Category of use (1) (by function and application i.e. a disperse dye for finishing polyester fibers)	CBI (2)	Binding Option Mark (x) (3)	Production % (4)	CBI (5)	% in Formulation (6)	CBI (7)	% of substance expected per use (8)					CBI (9)
							Site-limited	Consumer	Industrial	Commercial	Binding Option	
Aroma for use in fragrance mixtures, which in turn are used in perfumes, soaps, cleansers, etc.	<input type="checkbox"/>	<input type="checkbox"/>	100.0	<input type="checkbox"/>	%	<input checked="" type="checkbox"/>		X			<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>	%	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>

* If you have identified a "consumer" use, please provide on a continuation sheet a detailed description of the use(s) of this chemical substance in consumer products. In addition include estimates of the concentration of the new chemical substance as expected in consumer products and describe the chemical reactions by which this substance loses its identity in the consumer product.

☐ Mark (X) this box if you attach a continuation sheet.

b. Generic use description If you claim any category of use description in subsection 2a as confidential, enter a generic description of that category. Read the Instruction Manual for examples of generic use descriptions.

☐ Mark (X) this box if you attach a continuation sheet

3. Hazard Information -- Include in the notice a copy of reasonable facsimile of any hazard warning statement, label, material safety data sheet, or other information which will be provided to any person who is reasonably likely to be exposed to this substance regarding protective equipment or practices for the safe handling, transport, use, or disposal of the new substance. List in part III hazard information you include

☒ Mark (X) this box if you attach hazard information.

Binding Option Mark (x)

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE**Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER**

Mark (X) the "Confidential" box next to any item you claim as confidential

Complete section A for each type of manufacture, processing, or use operation involving the new chemical substance at industrial sites you control. Importers do not have to complete this section for operations outside the U.S.; however, you may still have reporting requirements if there are further industrial processing or use operations after import. You must describe these operations. See instructions manual

1. Operation description				Confidential
a. Identity -- Enter the identity of the site at which the operation will occur.				
Name Firmenich Inc				
Site address (number and street) 250 Plainsboro Rd				
City, County, State, ZIP code				
Plainsboro		Middlesex	NJ 08536	
If the same operation will occur at more than one site, enter the number of sites. Identify the additional sites on a continuation sheet, and if any of the sites have significantly different production rates or operations, include all the information requested in this section for those sites as attachments.				
<input type="checkbox"/> Mark (X) this box if you attach a continuation sheet.				
b. Type -- Mark (X) <input type="checkbox"/> Manufacturing <input checked="" type="checkbox"/> Processing <input type="checkbox"/> Use				
c. Amount and Duration -- Complete 1 or 2 as appropriate				
1. Batch	Maximum kg/batch (100% new chemical substance)	Hours/batch	Batches/year	<input checked="" type="checkbox"/>
2. Continuous	Maximum kg/day (100% new chemical substance)	Hours/day	Days/year	
d. Process description <input type="checkbox"/> Mark (X) to indicate your willingness to have your process description binding.				
<p>(1) Diagram the major unit operation steps and chemical conversions. Include interim storage and transport containers (specify- e.g. 5 gallon pails, 55 gallon drum, rail car, tank truck, etc.).</p> <p>(2) Provide the identity, the approximate weight (by kg/day or kg/batch on a 100% new chemical substance basis), and entry point of all starting materials and feedstocks (including reactants, solvents, catalysts, etc.), and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch).</p> <p>(3) Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance. If releasing to two media at the same step, assign a second release number for the second medium.</p> <p>Enter your descriptive text here. There is space on the next page for a separate file name and/or a PDF diagram.</p> <p>1. A master formula for a fragrance mixture containing Iris Germanica extract will be used by the compounder. The compounder will follow the instructions in the master formula to determine the weight of Iris Germanica extract to be used. It will be weighed into an open vat, with stirring, to blend it with the other materials in the formula. The average duration of mixing in the vat is 1-2 hours.</p> <p>2. The master formula is identified by a compound number, e.g., 049247. Each component of the master formula is identified by a unique six digit code. The production batch sheet will indicate the percentage, by weight, of Iris Germanica extract to be used as part of the total fragrance composition.</p> <p>Approximate batch size - 10000 kg. Feedstocks, reactants, catalysts - none. Solvents - a solvent may be specified in the master formula such as dipropylene glycol.</p> <p>3. During the initial phases of the blending operation, low concentrations of the material may enter the workplace air. After addition of all master formula ingredients, the mix vessel is covered for continuous blending. Based on the vapor pressure of the new chemical substance, it is estimated that the worker exposure to this material will be less than 1 ppm.</p> <p>The material is blended into fragrance compounds at 0.1% or less. See page 11 for pollution prevention information..</p>				
<input type="checkbox"/> Mark (X) this box if you attach a continuation sheet				

Confidential



Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER -- Continued

2. **Occupational Exposure** -- You must make separate confidentiality claims for the description of worker activity, physical form of the new chemical substance, number of works exposed, and duration of activity. Mark (X) the "Confidential" box next to any item you claim as confidential.

(1) -- Describe the activities (i.e. bag dumping, tote filling, unloading drums, sampling, cleaning, etc.) in which workers may be exposed to the substance.

(2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).

(3) -- Describe any protective equipment and engineering controls used to protect workers.

(4) and (6) -- Indicate your willingness to have the information provided in column (3) or (5) binding.

(5) -- Indicate the physical form(s) of the new chemical substance (e.g., solid; crystal, granule, powder, or dust) and % new chemical substance (if part of a mixture) at the time of exposure.

(7) -- Mark (X) this column if entry in column (5) is confidential business information (CBI).

(8) -- Estimate the maximum number of workers involved in each activity for all sites combined.

(9) -- Mark (X) this column if entry in column (8) is confidential business information (CBI).

(10) and (11) -- Estimate the maximum duration of the activity for any worker in hours per day and days per year.

(12) -- Mark (X) this column if entries in columns (10) and (11) are confidential business information (CBI).

[illegible]☐ Mark (X) this box if you attach a continuation sheet.

- 3. Environmental Release and Disposal** -- You must make separate confidentiality claims for the release number and the amount of the new chemical substance released and other release and disposal information. Mark (X) the "Confidential" box next to each item you claim as confidential.
- (1) -- Enter the number of each release point identified in the process description, part II, section A, subsection 1d(3).
- (2) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology (in kg/day or kg/batch).
- (3) -- Mark (X) this column if entries in columns (1) and (2) are confidential business information (CBI).
- (4) -- Identify the media (stack air, fugitive air (optional-see Instruction Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify)) to which the new substance will be released from that release point.
- (5) -- a. Describe control technology, if any, and control efficiency that will be used to limit the release of the new substance to the environment. For releases disposed of on land, characterize the disposal method and state whether it is approved for disposal of RCRA hazardous waste. On a continuation sheet, for each site describe any additional disposal methods that will be used and whether the waste is subject to secondary or tertiary on-site treatment. b. Estimate the amount released to the environment after control technology (in kg/day).
- (6) -- Mark (X) this column if entries in columns (4) and (5) are confidential business information (CBI).
- (7) -- Identify the destination(s) of releases to water. Please supply NPDES (National Pollutant Discharge Elimination System) numbers for direct discharges or NPDES numbers of the POTW (Publicly Owned Treatment Works). Mark (X) if the POTW name or NPDES # is confidential business information (CBI).

Release Number (1)	Amount of new substance released		CBI (3)	Medium of release e.g. stack air (4)	Control technology and efficiency (you may wish to optionally attach efficiency data)			CBI (6)
	(2a)	(2b)			(5a)	Binding Mark (X)	(5b)	
1		0.005	<input type="checkbox"/>	POTW	Low volatility of material alone and in mixtures limits release	<input type="checkbox"/>	0.0008	<input type="checkbox"/>
			<input type="checkbox"/>		to negligible amounts. See attached Calculation of Waste Potential	<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>

(7) Mark (X) the destination(s) of releases to water.

NPDES #

CBI

<input checked="" type="checkbox"/> POTW--provide name(s)	Firmenich, Inc., Plainsboro, NJ 08543	NJ 0031445	<input type="checkbox"/>
<input type="checkbox"/> Navigable waterway--provide name(s)			<input type="checkbox"/>
<input type="checkbox"/> Other--Specify			<input type="checkbox"/>

☐ Mark (X) this box if you attach a continuation sheet.

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued**Section B -- INDUSTRIAL SITES CONTROLLED BY OTHERS**

Complete section B for typical processing or use operations involving the new chemical substance at sites you do not control. Importers do not have to complete this section for operations outside the U.S.; however, you must report any processing or use activities after import. See the Instructions Manual. *Complete a separate section B for each type of processing, or use operation involving the new chemical substance.* If the same operation is performed at more than one site describe the typical operation common to these sites. Identify additional sites on a continuation sheet.

1(a). Operation Description -- To claim information in this section as confidential, circle or bracket the specific information that you claim as confidential.
 (1) -- Diagram the major unit operation steps and chemical conversions, including interim storage and transport containers (specify - e.g. 5 gallon pails, 55 gallon drums, rail cars, tank trucks, etc). On the diagram, identify by letter and briefly describe each worker activity. (2) -- Either in the diagram or in the text field 1(b) below, provide the identity, the approximate weight (by kg/day or kg/batch, on an 100% new chemical substance basis), and entry point of all feedstocks (including reactants, solvents and catalysts, etc) and all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch). (3) -- Either in the diagram or in the text field 1(b) below, identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance. (4) Please enter the # of sites (remember to identify the locations of these sites on a continuation sheet):

50
of sites

CBI



Diagram the major unit operation steps and chemical conversions...

1(b). (Optional) This space is for a text description to clarify the diagram above.

The subject chemical of this PMN will leave our controlled site as an ingredient in a fragrance compound (perfume oil). The concentration of the material will average 0.1%, or less, in the fragrance compound.

At controlled customer sites, the fragrance compound will be blended into consumer products, generally, at concentrations of 20% or less, resulting in an average final concentration, of this chemical in the consumer product, of 0.02% or less.

The number of possible uncontrolled sites where exposure may take place may be as many as 50.

The number of workers possibly exposed may be more than 500. The duration of the exposure will vary. The level of exposure, to the component, will be vanishingly small (well below 1 ppm).

☐ Mark (X) this box if you attach a continuation sheet.

2. Worker Exposure/Environmental Release

- (1) -- From the diagram above, provide the letter for each worker activity. Complete 2-8 for each worker activity described.
- (2) -- Estimate the number of workers exposed for all sites combined.
- (4) -- Estimate the typical duration of exposure per worker in (a) hours per day and (b) days per year.
- (6) -- Describe physical form of exposure and % new chemical substance (if in mixture), and any protective equipment and engineering controls, if any, used to protect workers.
- (7) -- Estimate the percent of the new substance as formulated when packaged or used as a final product.
- (9) -- From the process diagram above, enter the number of each release point. Complete 9-13 for each release point identified.
- (10) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology to the environment (in kg/day or kg/batch).
- (12) -- Describe media of release i.e. stack air, fugitive air (optional-see Instructions Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify) and control technology, if any, that will be used to limit the release of the new substance to the environment.
- (14) -- Identify byproducts which may result from the operation.

(3), (5), (8), (11), (13) and (15) -- Mark (X) this column if any of the proceeding entries are confidential business information (CBI).

Letter of Activity (1)	# of Workers Exposed (2)	CBI (3)	Duration Of Exposure		CBI (5)	Protective Equip. /Engineering Controls/Physical Form and/ % new substance (6)	% in Formulation (7)	CBI (8)
			(4a)	(4b)				
1	500	<input type="checkbox"/>	8	10	<input type="checkbox"/>	General ventilation, Gloves, eye protection/Spot ventilation	0.02	<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>

Release Number (9)	Amount of New Substance Released (10a)	Amount of New Substance Released (10b)	CBI (11)	Media of Release & Control Technology (12)	CBI (13)
1	-----	0.005 kg/day	<input type="checkbox"/>	WTP	<input type="checkbox"/>
			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>		<input type="checkbox"/>

(14) -- Byproducts: (15) ☐

☐ Mark (X) this box if you attach a continuation sheet.

OPTIONAL POLLUTION PREVENTION INFORMATION

To claim information in the following section as confidential circle or bracket the specific information that you claim as confidential.

In this section you may provide information not reported elsewhere in this form regarding your efforts to reduce or minimize potential risks associated with activities surrounding manufacturing, processing, use and disposal of the PMN substance. Please include new information pertinent to pollution prevention, including source reduction, recycling activities and safer processes or products available due to the new chemical substance. Source reduction includes the reduction in the amount or toxicity of chemical wastes by technological modification, process and procedure modification, product reformulation, raw materials substitution, and/or inventory control. Recycling refers to the reclamation of useful chemical components from wastes that would otherwise be treated or released as air emissions or water discharges, or land disposal. Descriptions of pollution prevention, source reduction and recycling should emphasize potential risk reduction subsequent to compliance with existing regulatory requirements and can be either quantitative or qualitative. The EPA is interested in the information to assess overall net reductions in toxicity or environmental releases and exposures, not the shifting of risks to other environmental media or non-environmental areas (e.g., occupational or consumer exposure). In addition, information on the relative cost or performance characteristics of the PMN substance to potential alternatives may be provided.

All information provided in this section will be taken into consideration during the review of this substance. See PMN Instructions Manual and Pollution Prevention Guidance manual for guidance and examples.

Optional Pollution Prevention Information (Continued) Describe the expected net benefits, such as (1) an overall reduction in risk to human health or the environment; (2) a reduction in the volume manufactured; (3) a reduction in the generation of waste materials through recycling, source reduction or other means; (4) a reduction in potential toxicity or human exposure and/or environmental release; (5) an increase in product performance, a decrease in the cost of production and/or improved operation efficiency of the new chemical substance in comparison to existing chemical substances used in similar application; or (6) the extent to which the new chemical substance may be a substitute for an existing substance that poses a greater overall risk to human health or the environment.

Mixtures containing this chemical, which do not pass specifications, are blended together with other like off-specification materials, and these blends of waste are sold for one-time use as fragrance oils for specific low-value applications. Thus, waste recapture eliminates material from the manufacturing plant. When the containers are empty, the covers are replaced, without washing, and the containers are removed by a private contractor for incineration of any residue in the container. The vessel in which the new chemical has been mixed/blended is cleaned with hot water and soap solution after processing, and the waste treated on site. Transfer of the mixture containing the new chemical to drums for shipping is accomplished by pumping in a closed system.

CBI



☐ Mark (X) this box if you attach a continuation sheet.

Mark (X) the "Confidential" box next to any attachment name you claim as confidential. Read the Instructions Manual for guidance on how to claim any information in an attachment as confidential. You must include with the sanitized copy of the notice form a sanitized version of any attachment in which you claim information as confidential.

#	Attachment name	Attachment Filename	Attachment page number(s)	Confidential
1	MSDS		19-21	<input type="checkbox"/>
2	Inventory Expert Service		22	<input type="checkbox"/>
3	Spectra: GC,		23-24	<input type="checkbox"/>
4	Name, structure & % of major ingredients		25	<input type="checkbox"/>
5	GC MS Analysis		26-28	<input type="checkbox"/>
6	Flash point determination		29-37	<input type="checkbox"/>
7	Waste Calculation		38	<input type="checkbox"/>
8	Evaluation of loss to waste-water during drums handling		39-41	<input type="checkbox"/>
9				<input type="checkbox"/>
10				<input type="checkbox"/>
11				<input type="checkbox"/>
				<input type="checkbox"/>
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				<input type="checkbox"/>

☐ Mark (X) this box if you attach a continuation sheet. Enter the attachment name and number.

PHYSICAL AND CHEMICAL PROPERTIES WORKSHEET

To assist EPA's review of physical and chemical properties data, please complete the following worksheet for data you provide and include it in the notice. Identify the property measured, the page of the notice on which the property appears, the value of the property, the units in which the property is measured (as necessary), and whether or not the property is claimed as confidential. If the attachments are electronic, give the attachment number (found on page 12) at (b). The physical state of the neat substance should be provided. These measured properties should be for the neat (100% pure) chemical substance. Properties that are measured for mixtures or formulations should be so noted (% PMN substance in ____). You are not required to submit this worksheet; however, EPA strongly recommends that you do so, as it will simplify review and ensure that confidential information is properly protected. You should submit this worksheet as a supplement to your submission of test data. This worksheet is not a substitute for submission of test data.


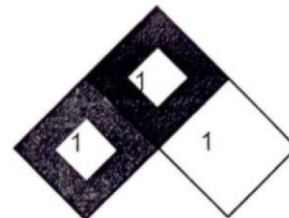
Property (a)	Mark (X) if provided	Page number (b)	Value (c)	Measured or Estimate (M or E)	Confidential Mark (X) (d)
Physical state of neat substance	<input type="checkbox"/>		<input type="checkbox"/> (s) <input type="checkbox"/> (l) <input type="checkbox"/> (g)	M	<input type="checkbox"/>
Vapor pressure @ Temperature _____ °C	<input type="checkbox"/>		Torr		<input type="checkbox"/>
Density/relative density	<input type="checkbox"/>		g/cm ³		<input type="checkbox"/>
Solubility @ Temperature _____ °C Solvent _____	<input type="checkbox"/>		g/L		<input type="checkbox"/>
Solubility in water @ Temperature _____ °C	<input type="checkbox"/>	0%	g/L		<input type="checkbox"/>
Melting temperature	<input type="checkbox"/>		°C		<input type="checkbox"/>
Boiling / sublimation temperature @ _____ torr pressure	<input type="checkbox"/>		°C		<input type="checkbox"/>
Spectra	<input checked="" type="checkbox"/>			M	<input type="checkbox"/>
Dissociation constant	<input type="checkbox"/>				<input type="checkbox"/>
Particle size distribution	<input type="checkbox"/>				<input type="checkbox"/>
Octanol / water partition coefficient	<input type="checkbox"/>				<input type="checkbox"/>
Henry's Law constant	<input type="checkbox"/>				<input type="checkbox"/>
Volatilization from water	<input type="checkbox"/>				<input type="checkbox"/>
Volatilization from soil	<input type="checkbox"/>				<input type="checkbox"/>
pH @ concentration _____	<input type="checkbox"/>				<input type="checkbox"/>
Flammability	<input checked="" type="checkbox"/>			M	<input type="checkbox"/>
Explosibility	<input type="checkbox"/>				<input type="checkbox"/>
Adsorption / coefficient	<input type="checkbox"/>				<input type="checkbox"/>
Other - Specify	<input type="checkbox"/>				<input type="checkbox"/>
Other - Specify	<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/> Mark (X) this box if you attach a continuation sheet. Enter the attachment name and number.					

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MATERIAL SAFETY DATA SHEET

Firmenich

NFPA HAZARD CLASSIFICATIONS

 = Health = Flammability = Reactivity

FOR INFORMATION OR IN AN EMERGENCY CALL 1-609-452-1000 (from 9:00 AM to 5:00 PM EST, M-F),
FOR ALL OTHER TIME PERIODS CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887.

I. IDENTIFICATION

Item reference: Iris germanica extract

CAS # 1048028-77-8

Chemical Name: Oils, Iris germanica, resinoid

Synonyms: Orris oil

II. PHYSICAL DATA

Specific gravity : N/A

Vapor pressure (at 20 C in mm Hg) N/A

Solubility in water: N/A

Vapor density (Air = 1) N/A

Physical state: LIQUID

Odor description: N/A

III. FIRE AND EXPLOSION HAZARD INFORMATION

Flash point(Clos. cup): 119°C

Non-combustible liquid by OSHA classification

Extinguishing media: Foam, carbon dioxide or dry chemical

Unusual Fire And Explosion Hazards:

None Known

Hazardous Combustion Products:

Burning liberates carbon monoxide, carbon dioxide and smoke.

Fire Fighting Procedures:

Use standard procedures and preferred extinguishing media as stated above.

IV. REACTIVITY INFORMATION

Stability:

Presents no significant reactivity hazard. Normally stable even at elevated temperatures and pressures. Not pyrophoric nor reactive with water. Does not undergo explosive decomposition, is shock stable, and is not an oxygen donor. Does not form explosive mixtures with other organic materials. Will not undergo hazardous exothermic polymerization.

Incompatibility (Materials To Avoid):




Avoid strong oxidizing agents.

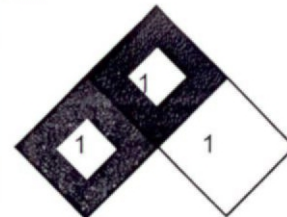
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MATERIAL SAFETY DATA SHEET

Firmenich

NFPA HAZARD CLASSIFICATIONS

-  = Health
-  = Flammability
-  = Reactivity



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V. HEALTH HAZARD INFORMATION

Threshold limit value (TLV):	Not established
OSHA permissible exposure limit (PEL):	Not established
Short term exposure limit (STEL):	Not established

Toxicological Information

This product has not been subjected to full toxicological testing. Therefore, containers should be opened in well ventilated areas. Skin and eyes should be protected from unnecessary contact.

May be irritating to skin and eyes.

VI. EMERGENCY AND FIRST AID PROCEDURES

Eye (Contact):

In the event of contact with the eyes, irrigate with water for at least ten minutes; obtain medical advice if irritation persists.

Skin (Contact):

Remove contaminated clothes. Wash affected area with water. If irritation persists, obtain medical advice.

Ingestion (Swallowing):

In the event of accidental ingestion, rinse mouth with water. Give up to one tumbler (half pint) of milk or water. Obtain medical advice immediately.

Inhalation:

Individuals showing evidence of inhalation exposure should be taken to an uncontaminated area. Obtain medical advice immediately. If necessary, assist breathing.

VII. HANDLING AND SPILL OR LEAK PROCEDURES

Empty all containers using a two stage pumping system or draining until no free liquid remains.

Steps To Be Taken If Material Is Released Or Spilled:

Eliminate all sources of ignition. Remove leaking containers to a well ventilated area if possible to do safely. If not, dike around container to limit spread of spill, leak. Small spills can be cleaned up with standard absorbents (sand, vermiculite, etc. Wear rubber gloves. Avoid contact with skin. If skin contact occurs, wash liberally with soap and water. See Section VI. If large leak/spill call HAZMAT Team.

Waste Disposal Method:


Incineration or sanitary landfill in accordance with local, state, and federal regulations.

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MATERIAL SAFETY DATA SHEET

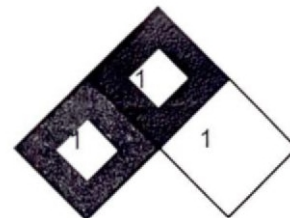
Firmenich

NFPA HAZARD CLASSIFICATIONS

 = Health

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 = Reactivity



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FOR ALL OTHER TIME PERIODS CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection:

In the absence of appropriate engineering controls such as spot ventilation, ventilated enclosures, etc., workers should avail themselves of the appropriate respiratory protection.

Ventilation:

For spills in confined areas, respiratory protection is recommended.

Protective Gloves:

Oil resistant gloves.

Eye protection:

Splash-resistant safety goggles

Other protective equipment:

None

IX. SPECIAL PRECAUTIONS

Precautions (Handling and Storing):

Keep away from heat and flame. Keep container closed when not in use. Use with adequate ventilation

MATERIAL SAFETY DATA SHEET PREPARED BY FIRMENICH, ~16 September 2008



A division of the American Chemical Society

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Inventory Expert Service

Phone: 800-631-1884, 614-447-3870

Fax: 614-447-3747

E-mail: answers@cas.org

Web: www.cas.org/products/client/

INVENTORY EXPERT SERVICE REPORT

IES-ORDER NUMBER: 124918

REGISTRY NUMBER: 1048028-77-8

CA INDEX NAME

Oils, Iris germanica, resinoid

Definition

Extractives and their physically modified derivatives. Iris germanica.

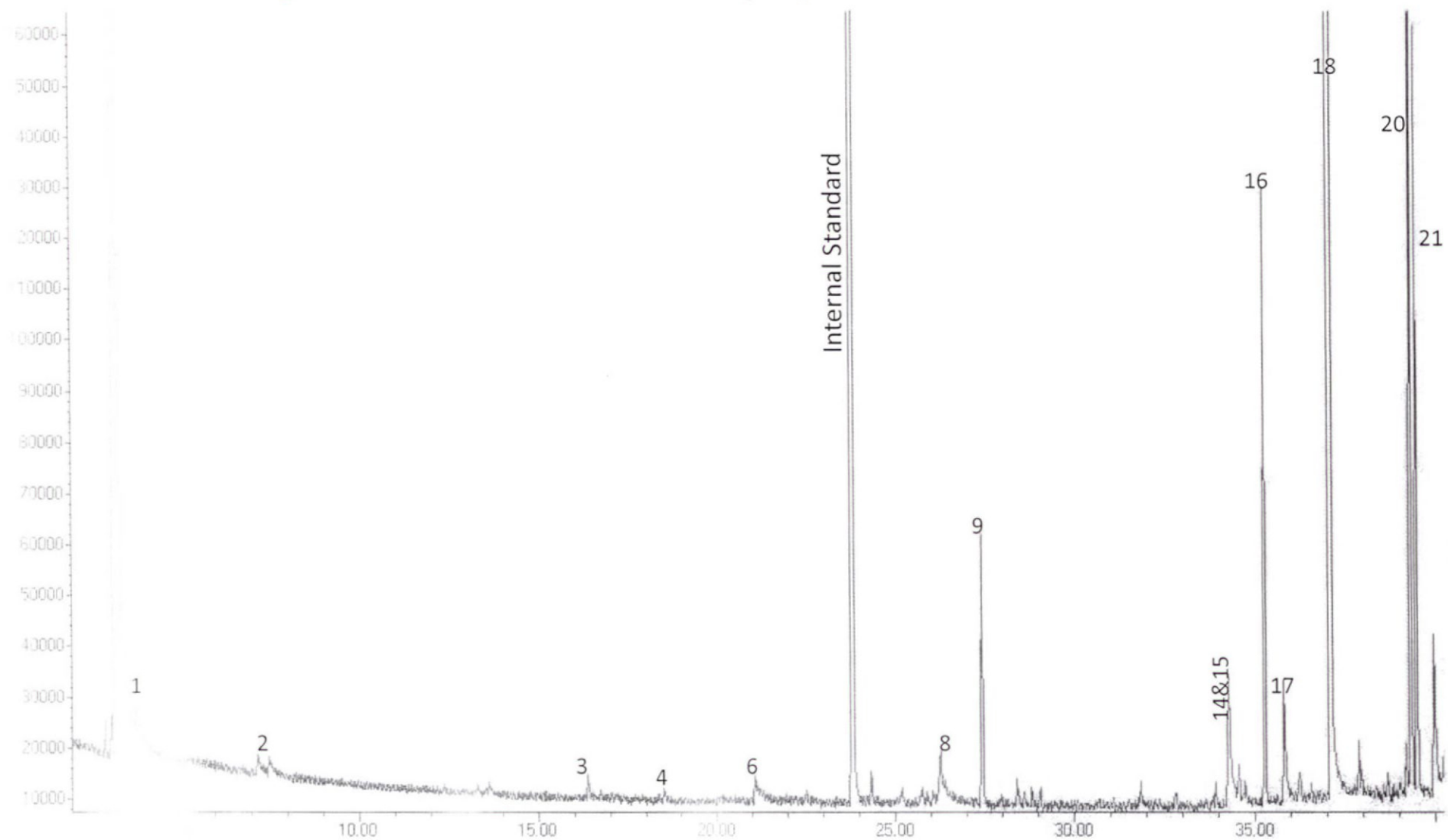
Please print the above CA Index Name on the appropriate page of your PMN.



If this box is checked, CAS has made correction(s) marked in red to your IES order. Please make the same correction(s) to your PMN before submitting it to the EPA.

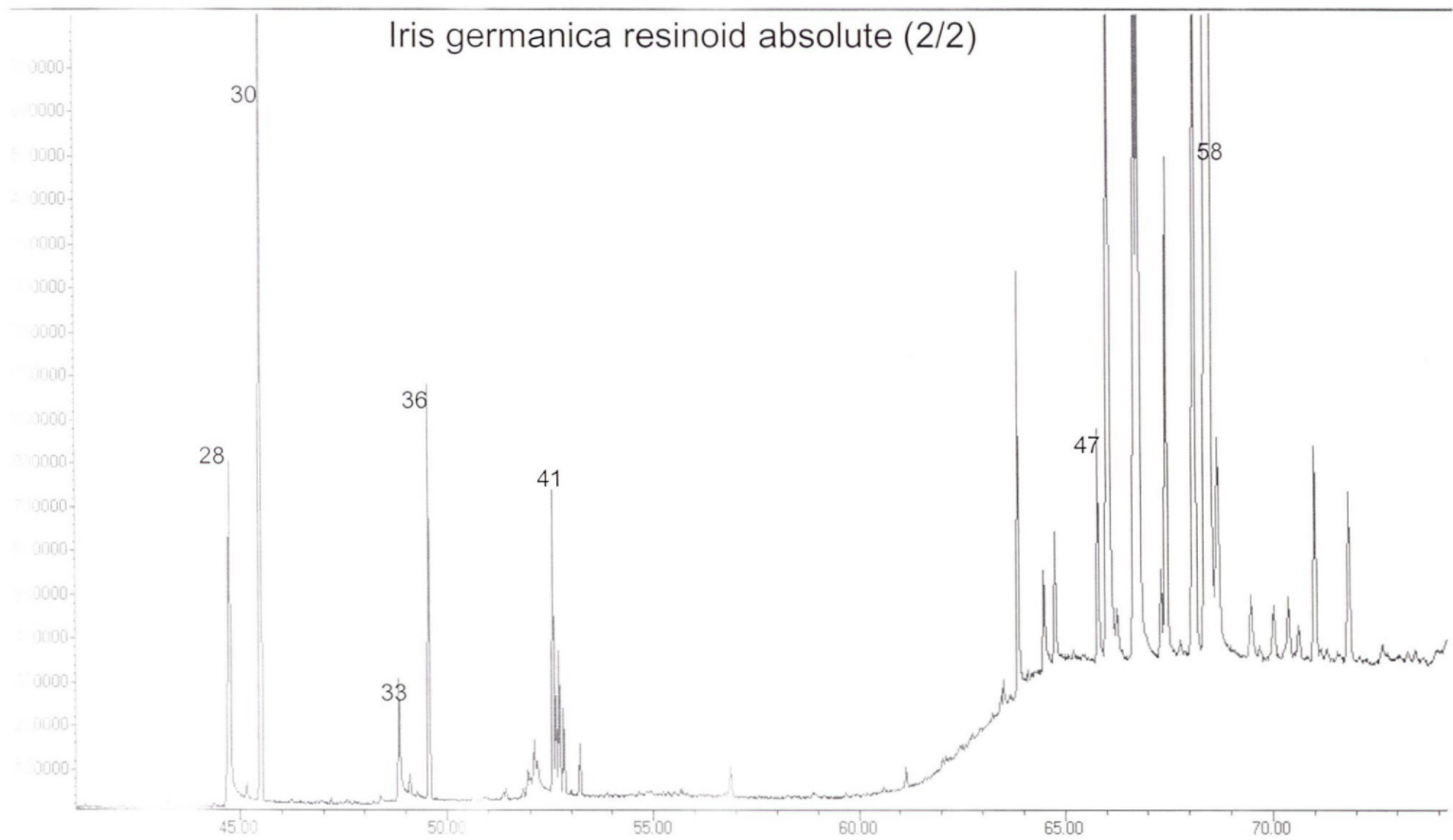
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Iris germanica resinoid absolute (1/2)



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Iris germanica resinoid absolute (2/2)



STRUCTURE OF THE MAIN COMPONENTS OF IRIS GERMANICA RESINOID ABSOLUTE:
IDENTIFIED CHEMICALS WITH PERCENTAGES EQUAL OR GREATER THAN 1%

%	Names	Structure	%	Names	Structure
25.83	JACEIDINE		1.90	ETHYL LINOLEATE	
6.87	ETHYL MYRISTATE		1.85	ETHYL PALMITATE	
3.67	MYRISTIC ACID		1.30	JACEOSIDIN	
2.999	1-(4-HYDROXY-3-METHOXY-1-PHENYL)-1-ETHANONE		1.11	PALMITIC ACID	

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Analysis of the volatile components from *Iris germanica* resinoid absolute

Date: 7/16/2008
 Samples: Iris germanica resinoid absolute
 Lab journ ref: 1586 O
 Experimental part:

All the compounds >0.1% GC/FID area were identified by GC/MS with their mass spectra (apolar and polar columns) and their retention index. The percentage composition was determined from the GC peak areas (apolar column) corrected by the response factor value determined by previous experiments on the same instruments. In a few cases, where no correction factor was available, the correction factor of a structurally closely related molecule was applied.

Sample preparation: Iris germanica resinoid absolute (476.3 mg) and methyl octanoate (13.4 mg) as an internal standard were diluted with 5 ml of Dichloromethane.

GC-MS and GC-FID conditions: the sample was injected on a GC-MS 6890N/5973 inert (Agilent) and GC-FID equipped with two polar and apolar columns: ZBWax and DB-1 capillary column, 30 m for Polar or 60m for Apolar \times 0.25 mm, film thickness 0.25 μ m. Temperature program: 50 °C, 5 min. isotherm, then 3 °C/min to 120 °C, then 5 °C/min to 250, 5 min. isotherm, then 15 °C/min to 300 °C, 20 min. isotherm. Carrier gas: helium; split ratio 1:50, injection volume 0.2 mL.

Results:

% volatiles^[1]: 40.7 %

Peak N°	RTTIC (min)	KIapol	KIapol library	Name	% GC-FID ^[2]	CAS Number	CAS Name	In TSCA Inventory
1	3.81	563	611	ACETIC ACID	0.131	000064-19-7	Acetic acid	Yes
2	7.18	751	751	2,3-BUTANEDIOL	0.122	000513-85-9	2,3-Butanediol	Yes
3	13.62	909	883	2-HYDROXY-1-METHYLPROPYL ACETATE	0.018	056255-48-2	2,3-Butanediol, monoacetate	No
4	16.38	962	961	6-METHYL-5-HEPTEN-2-ONE	0.024	000110-93-0	5-Hepten-2-one, 6-methyl-	Yes
5	18.51	1004	1013	BENZYL ALCOHOL	0.015	000100-51-6	Benzenemethanol	Yes
6	21.07	1053	0	GLYCEROL 1-ACETATE	0.041	000106-61-6	1,2,3-Propanetriol, 1-acetate	No
7	22.50	1081	1083	PHENETHYLOL	0.010	000060-12-8	Benzeneethanol	Yes
8	26.25	1156	1176	OCTANOIC ACID	0.180	000124-07-2	Octanoic acid	Yes
9	27.42	1180	1180	ETHYL OCTANOATE	0.223	000106-32-1	Octanoic acid, ethyl ester	Yes
10	27.94	1191	1198	4-VINYLPHENOL	0.009	002628-17-3	Phenol, 4-ethenyl-	No
11	28.81	1210	1235	SAFIANOL	0.022	006379-73-3	Benzene, 2-methoxy-1-methyl-4-(1-methylethyl)-	Yes
12	31.83	1282	1282	VINYL GUAIACOL	0.017	007786-61-0	Phenol, 4-ethenyl-2-methoxy-	Yes
13	32.82	1307	1307	METHYL DECANOATE	0.012	000110-42-9	Decanoic acid, methyl ester	Yes
14	34.27	1350	1344	DECANOIC ACID	0.197	000334-48-5	Decanoic acid	Yes
15	34.3	1351	1347	VANILLIN	0.059	000121-33-5	Benzaldehyde, 4-hydroxy-3-methoxy-	Yes
16	35.27	1380	1384	ETHYL DECANOATE	0.348	000110-38-3	Decanoic acid, ethyl ester	Yes

17	35.81	1396	1398	PICEOL (=1-(4-HYDROXYPHENYL)-1-ETHANONE)	0.098	000099-93-4	Ethanone, 1-(4-hydroxyphenyl)-	Yes
18	37.10	1439	1451	1-(4-HYDROXY-3-METHOXY-1-PHENYL)-1-ETHANONE	2.999	000498-02-2	Ethanone, 1-(4-hydroxy-3-methoxyphenyl)-	Yes
19	39.20	1513	1366	1-(3,4-DIMETHOXYPHENYL)-1-ETHANONE	0.018	001131-62-0	Ethanone, 1-(3,4-dimethoxyphenyl)-	Yes
20	39.33	1518	1533	CIS-ALPHA-IRONE	0.697	000472-46-8	3-Buten-2-one, 4-[(1R,5S)-2,5,6,6-tetramethyl-2-cyclohexen-1-yl]-, (3E)-rel-	No
21	39.49	1524	1487	GAMMA-IRONE	0.462	000079-68-5	3-Buten-2-one, 4-(2,2,3-trimethyl-6-methylenecyclohexyl)-	Yes
22	39.98	1543	1553	DODECANOIC ACID	0.179	000143-07-7	Dodecanoic acid	Yes
23	40.87	1578	1581	ETHYL LAURATE	0.409	000106-33-2	Dodecanoic acid, ethyl ester	Yes
24	41.27	1594	0	ACETOSYRINGONE	0.023	002478-38-8	Ethanone, 1-(4-hydroxy-3,5-dimethoxyphenyl)-	No
25	41.47	1601	1615	SYRINGALDEHYDE	0.016	000134-96-3	Benzaldehyde, 4-hydroxy-3,5-dimethoxy-	Yes
26	43.96	1708	1707	METHYL MYRISTATE	0.050	000124-10-7	Tetradecanoic acid, methyl ester	Yes
27	44.37	1726	1736	BENZYL BENZOATE	0.049	000120-51-4	Benzoic acid, phenylmethyl ester	Yes
28	44.71	1742	1764	MYRISTIC ACID	3.665	000544-63-8	Tetradecanoic acid	Yes
29	45.17	1763	1760	ETHYL 9-TETRADECENOATE	0.108	No	9-Tetradecenoic acid, ethyl ester	No
30	45.50	1778	1789	ETHYL MYRISTATE	6.872	000124-06-1	Tetradecanoic acid, ethyl ester	Yes
31	47.57	1877	1865	ETHYL PENTADECANOATE	0.031	041114-00-5	Pentadecanoic acid, ethyl ester	No
32	48.38	1917	0	9-HEXADECENOIC ACID	0.126	002091-29-4	9-Hexadecenoic acid	Yes
33	48.83	1941	1927	PALMITIC ACID	1.109	000057-10-3	Hexadecanoic acid	Yes
34	49.09	1954	0	ETHYL 9-HEXADECENOATE	0.151	054546-22-4	9-Hexadecenoic acid, ethyl ester	No
35	49.28	1964	0	ETHYL 9-HEXADECANOATE	0.039	No	9-hexadecanoic acid, ethyl ester	No
36	49.55	1977	1985	ETHYL PALMITATE	1.847	000628-97-7	Hexadecanoic acid, ethyl ester	Yes
37	51.34	2073	2048	2-HYDROXY-1-METHYLPROPYL TETRADECANOATE	0.048	No	Tetradecanoic acid, 2-hydroxy-1-methylpropyl	No
38	51.42	2077	2055	ETHYL HEPTADECANOATE	0.093	014010-23-2	Heptadecanoic acid, ethyl ester	No
39	51.95	2106	1996	LINOLEIC ACID	0.309	000060-33-3	9,12-Octadecadienoic acid (9Z,12Z)-	Yes
40	52.10	2114	2157	OLEIC ACID	0.552	000112-80-1	9-Octadecenoic acid (9Z)-	Yes
41	52.56	2141	2136	ETHYL LINOLEATE	1.903	000544-35-4	9,12-Octadecadienoic acid (9Z,12Z)-, ethyl ester	Yes
42	52.64	2145	2143	ETHYL LINOLENATE	0.541	001191-41-9	9,12,15-Octadecatrienoic acid, ethyl ester, (9Z,12Z,15Z)-	Yes
43	52.71	2149	2155	ETHYL OLEATE	0.796	000111-62-6	9-Octadecenoic acid (9Z)-, ethyl ester	Yes
44	52.82	2155	2128	ETHYL TRANS-9-OCTADECENOATE	0.481	006114-18-7	9-Octadecenoic acid, ethyl ester, (9E)-	No
45	53.22	2178	2180	ETHYLE STEARATE	0.275	000111-61-5	Octadecanoic acid, ethyl ester	Yes
46	56.87	2376	0	ETHYL ICOSANOATE	0.262	018281-05-5	Eicosanoic acid, ethyl ester	No
47	65.81	2950	0	JACEOSIDIN	1.295	018085-97-7	4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-(4-hydroxy-3-methoxyphenyl)-6-methoxy-	No
48	63.87	2796	0	UNKNOWN	2.138			
49	64.50	2847	0	UNKNOWN	0.794			

12345678910111213141516171819202122232425262728293031323334353637383940414243444546474849

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50	64.76	2869	0	UNKNOWN	0.853			
51	66.08	2970	0	UNKNOWN	7.590			
52	66.27	3017	0	UNKNOWN	0.260			
53	66.73	3023	0	UNKNOWN	6.775			
54	66.81	3067	0	UNKNOWN	5.737			
55	67.34	0	0	UNKNOWN	0.582			
56	67.46	0	0	UNKNOWN	2.810			
57	68.14	0	0	UNKNOWN	6.238			
58	68.50	0	0	JACEIDINE	25.829	010173-01-0	4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-(4-hydroxy-3-methoxyphenyl)-3,6-dimethoxy-	No
59	68.69	0	0	UNKNOWN	1.131			
60	68.7	0	0	UNKNOWN	0.527			
61	69.49	0	0	UNKNOWN	0.568			
62	70.04	0	0	UNKNOWN	0.555			
63	70.39	0	0	UNKNOWN	0.502			
64	70.64	0	0	UNKNOWN	0.416			
65	71.03	0	0	UNKNOWN	1.276			
66	71.3	0	0	UNKNOWN	0.257			
67	71.84	0	0	UNKNOWN	1.688			
68	75.39	0	0	UNKNOWN	0.420			
69	75.58	0	0	UNKNOWN	0.413			
70	75.8	0	0	UNKNOWN	0.291			
71	76.09	0	0	UNKNOWN	0.996			
72	78.7	0	0	UNKNOWN	0.522			

% total ^[3]

96.101

% GC-FID identified ^[4]

52.764

[1]: results from the sum of the mass corresponding to all the peaks detected by FID (except solvent and internal standard peaks) corrected with their correction factors (a correction factor of 1.00 was applied for unknown compounds).

[2]: results from the the mass corresponding to the peak, corrected with its correction factor. The % is related to the sum of the masses of all detected peaks.

[3]: sum of all the peaks (all identified peaks + unknowns present at > 0.1%)

[4]: sum of all the identified peaks

Notes:

The dry matter has been determined by measuring the weight difference after heating around 1g of sample at 105°C during 24 hours. In the Iris Résinoïde Abs., the dry matter is 86%.

Attached documents: GC-MS trace with peaks annotated with the peak number given in column A.

Firmenich

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Laboratory of Analysis and Measurements
La Plaine**Form** F527-P113/v8
Study E076-07.2008**Final Report**

- ✎ **Study title:** **ST 14 C 08 IRIS GERMANICA EXTRACT.**
Determination of General Physico-Chemical Properties:
Flash Point.
- ✎ **Substance Name** **IRIS GERMANICA EXTRACT.**
- ✎ **Chemical Name** **Iris germanica extract.**
- ✎ **Study Director:**
✓ Name: Corinne RUOLS
✓ Address: Firmenich SA
125, Rte de la Plaine
1283 La Plaine-CH
- ✎ **Study Technician:**
✓ Name: Corinne RUOLS
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- ✎ **Test Facility Manager:**
✓ Name: Domingo RODRIGUEZ
✓ Address: Firmenich SA
125, Rte de la Plaine
1283 La Plaine-CH
- ✎ **Study Sponsor:**
✓ Name: Christine Lachausse
✓ Address: Firmenich SA
1, Rte des Jeunes
1211 Genève-CH
- ✎ **Study starting date:** 11.07.2008
✎ **Report completion date:** 15.07.2008
- ✎ **Report Distribution List:** C. Lachausse, G. Suardi, C. Pischitta, D. Rodriguez, C. Ruols

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QUALITY ASSURANCE STATEMENT

This report has been audited by Firmenich Quality Assurance Responsible, and is considered to be an accurate account of the data generated and of the procedures followed, at the Laboratory of Analysis and Measurements of Firmenich/La Plaine.

In each case, the outcome of QA evaluation is reported to the Study Director/Management on the day of evaluation.

Audits of study documentation, and study inspections appropriate to the type and schedule of this study were as follows:

Protocol "Plan d'Etude":	Date: 11.07.2008
Flash Point:	Date: 14.07.2008
Draft Report Audit:	Date: 15.07.2008
Final Report Audit:	Date of QA Signature

The Quality Assurance Statement is approved by :

Quality Assurance Responsible:

G. Suardi:

Date:

15.07.2008

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GLP COMPLIANCE STATEMENT

I, the undersigned, hereby declare that the objectives laid down in the protocol were achieved and as nothing occurred to adversely affect the quality or integrity of the study, I consider the data generated to be valid. This report fully and accurately reflects the procedures used and data generated.

The work described was performed in compliance with the Swiss Ordinance relating to Good Laboratory Practice, adopted May 18th, 2005 (RS 813.112.1). This Ordinance is based on the OECD Principles of Good Laboratory Practice, as revised in 1997 (ENV/MC/CHEM(98)17), and is in accordance with, and implement, the requirements of Directives 2004/9/EC and 2004/10/EC.

These international standards are acceptable to the US Environmental Protection Agency and Food and Drug Administration, and fulfil the requirements of 40 CFR part 160, 40 CFR part 792 and 21 CFR part 58 (as amended).

Study Director:

C. Ruols



Date:

15.07.2008

Approved by:

Test Facility Manager:







D. Rodriguez



Date:

15.07.2008

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SUMMARY

Determination of General Physico-Chemical Properties: *Iris germanica* extract.

Flash Point: $119^{\circ}\text{C} \pm 2^{\circ}\text{C}$, using the Method A9, specified in Commission Directive 92/69/EEC (which constitutes Annex V of Council Directive 67/548/EEC).

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1. INTRODUCTION

General Physico-Chemical Properties: Flash Point of the test material Iris germanica extract has been determined.

Method employed complied with those specified in Commission Directive 92/69/EEC of 31 July 1992 (which constitutes Annex V of Council Directive 67/548/EEC).

Testing was conducted on 14 July 2008.

2. TEST MATERIAL

2.1 Description, Identification and Storage Conditions

- ✓ Identification: ST 14 C 08 (Iris germanica extract)
- ✓ Description: Brown paste
- ✓ Batch number: 8051026101
- ✓ Purity: Not applicable (plant extract-UVCB substance)
- ✓ Date received: 03 June 2008
- ✓ Expiry date: May 2009
- ✓ Storage conditions: Refrigerator (between 0 and 10°C under nitrogen)

Data relating to the identity, purity and stability of the test material are the responsibility of the Sponsor.

3. ARCHIVES

All original data (protocol, audits and final report) and test material will be retained in the Firmenich Laboratory of Analysis and Measurements La Plaine archives for ten years, after which instructions will be sought as to further retention or disposal.

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4. - FLASH POINT

4.1- Method

The flash point was determined using a closed cup equilibrium method, Method A9 of Commission Directive 92/69/EEC (which constitutes Annex V of Council Directive 67/548/EEC).

4.1.1 Procedure

An aliquot (2 ml) of the test material was introduced into the sample cup of the Rapid Flash Tester RT-1.

The sample was heated and allowed to equilibrate at the set temperature. The test flame was introduced into the sample cup for approximately 2 seconds by sliding the cup shutter open.

Observations were made for ignition of the vapour. If no ignition occurred, the temperature was increased and the test flame re-introduced. This was repeated until the lowest reproducible temperature at which a flash occurred on application of a flame using a fresh sample was determined.

A preliminary test was performed, and then the determination was carried out in duplicate.

4.1.2 Calculation

The flash temperature was corrected to a pressure of 101.325 kPa using Equation 4.1.

✓ **Equation 4.1** $FP = C + 0.23 (101.325 - B)$

where:

FP = corrected flash point (°C)

C = observed flash point (°C)

B = ambient atmospheric pressure (kPa)

4.2 Results

Temperature (°C)	Observations
Preliminary determination	
30	No flash / Brown paste
55	No flash / Brown Paste
62	No flash / Brown Paste
75	No flash / Brown liquid
89	No flash / Brown liquid
100	No flash / Brown liquid
142	Flash / Brown liquid
Determination 1 (fresh sample)	
100	No flash / Brown liquid
106	No flash / Brown liquid
110	No flash / Brown liquid
114	No flash / Brown liquid
116	No flash / Brown liquid
118	Flash / Brown liquid
Determination 2 (fresh sample)	
97	No flash / Brown liquid
101	No flash / Brown liquid
105	No flash / Brown liquid
109	No flash / Brown liquid
113	No flash / Brown liquid
116	No flash / Brown liquid
117	No flash / Brown liquid
118	Flash / Brown liquid

Atmospheric pressure = 98.1 kPa

Corrected flash point = 118.74°C

4.3 Conclusion

The flash point of the test material has been determined to be 119°C ± 2°C.

4.4 Reference

Determination of Flash Point - Rapid Equilibrium Method, International Standard ISO 3679-1983 (F), Flash Point of Liquids by Small Scale Closed-Cup Apparatus ASTM D-3278-96, pages 1-8.

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APPENDIX 1: GLP CERTIFICATE

The Swiss GLP Monitoring Authorities



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun Svizra

Swiss Confederation

Federal Department of Home Affairs DHA
Federal Office of Public Health FOHP

Federal Department of the Environment,
Transport, Energy and Communications DETEC
Federal Office for the Environment FOEN

SWISSmedic

Swiss Agency for Therapeutic Products

Statement of GLP Compliance

According to Article 14 paragraph 3 Ordinance on Good Laboratory Practice [OGLP, SR 813.112.1]

The notification authority for chemicals confirms that the following test facility was inspected with respect to the compliance with the Swiss Ordinance on Good Laboratory Practice, adopted on 18th May 2005 [OGLP, SR 813.112.1]. This Ordinance is based on the OECD Principles of Good Laboratory Practice, as revised in 1997 and adopted on 26th November 1997 by decision of the OECD Council [C(97)186/Final].

Unequivocal name and address
of the test facility:

Area of expertise according to
article 3 paragraph 1 letter d OGLP:

Laboratoire d'analyse et de
Mesure, La Plaine
Firmenich SA
Route de la Plaine 125
1283 La Plaine-Genève
Switzerland

1./ Physical-chemical testing

Inspection authority: Federal Office of Public Health (FOHP)

Date of inspection: 15th and 16th November 2006

Date of decision: 26th February 2007

Based on the above mentioned decision it can be confirmed that the above mentioned test facility is able to conduct studies according to the aforementioned area of expertise in compliance with the principles of GLP. The above mentioned test facility is listed in the register and GLP list according to the Article 14 OGLP and is inspected on a regular basis according to Article 6 paragraph 2 OGLP.

Swiss Federal Office of Public Health
Consumer protection directorate
Notification authority for chemicals
CH-3003 Bern



Dr. Dag Kappes

Bern, 29th March 2007, The Head, Dr. Dag Kappes.

The notification authority for chemicals is the coordination and decision authority for the good laboratory practice (GLP) for the FOEN, the FOHP and Swissmedic.

Swiss Federal Office of Public Health, Consumer protection directorate, Notification authority for chemicals, CH-3003 Bern

www.firmenich.ch, Phone: +41 (0)31 322 21 05, Fax: +41 (0)31 322 54 80

CALCULATION OF WASTE POTENTIAL
Princeton, NJ site

The following is a calculation of the volume of the PMN application material that would be expected to reach the effluent stream for the Firmenich Inc. Princeton facility during normal formulation activities.

For a typical 10,000 kg batch in a 15,000 L kettle, the wetted surface area is approximately 525 ft². The film of product remaining on the tank surface is very thin and the tank walls are polished to minimize film adhesion. We assume that this film thickness is 0.1 mm (3.3 X 10⁻⁴ ft). Thus the amount remaining after emptying the tank via a bottom drain would be

$$(525 \text{ ft}^2)(3.3 \times 10^{-4} \text{ ft})(1 \text{ L}/0.03531 \text{ ft}^3)(1 \text{ kg/L}) = 4.92 \text{ kg/batch (0.049\%)} \\ = 0.005 \text{ kg of new substance/batch}$$

Each tank is thoroughly cleaned with soap and water between products to minimize any cross contamination and this waste water is sent to the on-site waste treatment plant (WTP). This WTP is equipped with a Dissolved Air Flootation (DAF) system prior to the biological system for the removal of oil and grease. In general, this DAF is considered to be 70% efficient with high efficiency expected for materials with a high O/W value. The removed oil is then incinerated. Thus only approximately 1.48 kg/batch of the original 10,000 kg (0.0015 kg new substance) reaches the biological treatment stage, where it is further degraded.

Assuming a relatively low biotransformation level for the material of only 50%, then only approximately 0.0008 kg/batch of the new chemical in the original 10,000 kg batch, containing 0.1% of this chemical, would reach the effluent.

Evaluation of loss to waste-water during drums handling

1. Introduction

The Technical Guidance Document (European Commission, 1996) is a guidance note which is regularly updated and intended to help the authorities and industry complete procedures for the notification, the classification and risk evaluation of new substances and priority existing chemicals.

Part 2 of this document describes the standardized way environmental risk assessments should be carried out. Environmental assessments are supported by the Euses software which sets conservative default values if no other data are available.

The goal of this note is to discuss the default value of 2% of loss to waste-water at product formulation. This value is given in chapter 3, Table A2.1: "Estimates for the emission factors (fractions released), formulation part, yearly volume less than 1000 t/year".

Indeed, a 2% of loss to waste-water is significantly exaggerated and unrealistic for the flavour and fragrance industry. This assumption implies that manufacturers of cosmetics/household cleaning products leave 2% of their fragrances in the shipping containers (drums, totes, etc) and only incorporated 98% of these contents into the final consumer products. These residues are then assumed to be lost to drains during cleaning. In reality, this does not happen. We know that fragrance residues remaining in drums after use by manufacturers of cosmetics/household cleaning products are significantly lower than 2%. Measurements made by some major fragrance users have given results of 10 to 100 times lower than this.

For over 2 years, we have been attempting to obtain measurements on an industry-wide scale, however under the current system, down-stream users are little motivated to participate in the risk assessment process.

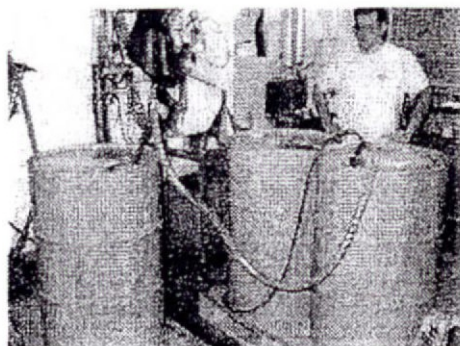
In order to enable us to discuss this default value, we made 5 replicate measurements of several raw materials in our manufacturing site of Meyrin-Satigny, Switzerland.

2. Procedure

The method used (point 3) for the evaluation is identical of procedure used daily in the manufacturing site:

1. An empty drum of 180 or 200 kg is weighed thanks to a tare
2. The drum is then filled and completely emptied again

3. Emptying procedure:
 - Pumping of the main quantity (picture 1)
 - Siphoning of the remaining quantity by pumping under vacuum -30 mb with a stick (picture 2)
4. The emptied drum is weighed
5. The residue is calculated by difference



Picture 1



Picture 2

3. Results

Product Name & code	Viscosity @ 20°C (m2/s)	Density @ 20°C	Atm T/ T of transfer [°C]	Drum type	Remaining quantity [g]	% waste
OCTALYNOL (967544)	1.68×10^{-5}	0.959	22 / 22	DL / 180	50	0.03
FIRSANTOL (942596)	1.20×10^{-4}	0.923	22 / 22	DL / 180	100	0.06
HELVETOLIDE (947650)	1.59×10^{-5}	0.939	22 / 22	DL / 180	50	0.03
WOLFWOOD (992392) cristalisé à 20°C	1.10×10^{-4}	1.030	22 / 60	DL / 180	100	0.06
ROMANDOLIDE (979031)	2.56×10^{-5}	1.006	22 / 22	DI / 200	100	0.05

4. Conclusion

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The maximum loss to waste-water is 0.06% and the mean value is equal to 0.05%. These results corroborate measurements made by some major fragrance users with results of 10 to 100 times lower than the default assumption of 2% of loss to waste-water. By extension, we can make the assumption that these data are valid for a whole range of flavour and fragrance raw materials as well as for mixtures.

Moreover, results obtained would further over-estimate loss to drains because cleaning is not usually done using water, and if any quantity was to enter waste-water, oil skimmers would remove the large part of the water insoluble material.

In conclusion, we would find more appropriate to use the default emission factor given in the Technical Guidance Document for yearly volume higher than 1000 t instead of the emission factor (2%) given for yearly volume lower than 1000 t. This factor is equal to 0.3% and can be considered as a conservative worst-case estimate of loss to waste-water with regard to our industry (Table A2.1: "Estimates for the emission factors (fractions released), formulation part).